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I.—*On the Raptorial Birds of the Malay Archipelago.*

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(Plate I.)

IN the 'Muséum d'Histoire Naturelle des Pays-Bas,' the publication of which was commenced in 1862, Professor Schlegel has given a complete enumeration, often accompanied by descriptions and measurements, of all the specimens of Raptorial Birds contained in the Leyden Museum; and in his more recent work, 'Les Oiseaux des Indes Néerlandaises,' the third monograph*, published in 1866, contains figures and descriptions of all the *Falconidæ* known to inhabit the Dutch East-Indian possessions. Later still, in the 'Proceedings of the Zoological Society of London' for 1867, is a paper by Dr. Kaup, "On the *Nisi* and *Astures* of the Indian Archipelago and of New Holland," undoubtedly the most difficult group of the Eastern *Accipitres*. It may fairly be asked, therefore, what novelty or interest the present Catalogue possesses, to render it worthy of publication in 'The Ibis.'

My answer is, that Professor Schlegel's works above enumerated do not give a complete list of the Malayan *Accipitres*; for the first is a Museum Catalogue, the second a Colonial fauna;

* Here quoted as "Valkv. Nederl. Ind."

and, therefore, all species which do not exist in the Leyden Museum and which inhabit the Malay Archipelago, Northern Borneo, the Philippine Islands, Eastern New Guinea, and the islands extending thence to the Solomon Islands do not find a place in his works, although they undoubtedly form a part of the fauna of the Malay Archipelago. In the next place, I possess an extensive collection of this group formed by myself, comprising *seventy-two* out of the *eighty-seven* known species, and containing fine series of many of the species accurately labelled with locality and sex, with notes of the colours of the soft parts, which information I desire to make known in a connected form. Lastly, I differ in many points from both Prof. Schlegel and Dr. Kaup, and wish to explain the reasons why I differ from such eminent men.

With the exception that Vultures are entirely absent, birds of prey are tolerably plentiful in the Archipelago, the total number of species being greater than those of India as restricted by Dr. Jerdon. This large number seems to be chiefly due to the breaking-up of the district into a vast number of islands, most of which were separated at a more remote epoch than that of the origin of many existing species, while some date from a high geological antiquity. Closely allied representative species, therefore, abound and swell the total amount, although in any one island or locality the number to be obtained is very small. The average number of *Falconidæ* found in an island is ten, of *Strigidæ* three. Java contains the largest number, possessing seventeen Hawks and eight Owls; Celebes comes next, with the same number of Hawks, but only five Owls; whereas in many districts of India, equal in extent to one of these islands, double this number of species would probably be obtained. In Ceylon Mr. Layard obtained twenty-three Hawks and seven Owls.

Of the subfamilies, the true Hawks (*Accipitrinæ*) are the most abundant, numbering eighteen species; next come the Eagles (*Aquilinæ*) with sixteen species, the Kites (*Milvinæ*) with ten species, the Falcons (*Falconinæ*) with six species, and the Buzzards and Harriers (*Buteoninæ*) three species. Taking the groups of islands, the number of species diminishes pretty regularly from west to east. The Indo-Malay group (Malacca,

Sumatra, Java, and Borneo) has thirty-eight species, the Philippines (no doubt imperfectly explored) ten, the Celebes group twenty-five, Moluccan group twenty-five, Timor group sixteen, Papuan group fourteen. Yet, owing to the larger number of islands, and the richness of Celebes as compared with the Philippines, the Austro-Malayan Region, on the east, possesses more species than the Indo-Malayan Region on the west, the former having fifty-eight, the latter forty-four species. The greater power of flight and more roaming habits of the diurnal as compared with the nocturnal birds of prey is well indicated by the fact that, while fourteen *Falconidæ* are common to the Indian and Australian regions of the Archipelago, only a single Owl has the same range—which is very suggestive of the natural character of these divisions. But few of the genera have a limited range. *Hierax* is strictly confined to the Indian region, and *Spizaetus*, *Polioaetus*, and *Spilornis* only pass beyond it into Celebes. This island exhibits its usual characteristic of a number of peculiar species, having (with the Sula Islands) eleven out of twenty-five which are found in no other island, an unusually large number in this wide-roaming group of birds. It also seems to have some power of conferring on its species a peculiar *facies*, similar to that which I have already noticed as occurring among the *Papilionidæ* (Trans. Linn. Soc. xxv. pp. 1-71). The Celebes varieties of *Pernis cristatus* and *Spizaetus lanceolatus* are coloured exactly alike, with a brown spotted band across the breast; and there is a similar style of coloration in *Spilornis rufipectus* and *S. sulaensis*, as well as in *Baza magnirostris*—all species peculiar to the Celebes group. Truly this island is a mystery hard to be understood—one of Nature's best riddles, which no man can find out!

The classification of the Birds of Prey is so difficult that hardly two authors entirely agree upon it. As regards eastern genera, I think Dr. Jerdon, in his 'Birds of India,' has given the most natural arrangement; and I mainly follow him in the *Falconidæ*. It appears to me very unnatural to break up the large and powerful Eagles of the genera *Circæus*, *Spilornis*, and *Spizaetus* among the Buzzards and Hawks, as is done by Bonaparte and Prof. Schlegel, because we thereby destroy the

distinctive features of those groups. *Haliastur*, however, seems much better placed among the Kites, with which it agrees in all essential characters. Schlegel places *Aquila gurneyi* as a *Spizaetus* among his *Astures*, and thus groups one of the most massive of the Eagles in the same subfamily with the most delicate little Sparrow-Hawks, such as *Accipiter virgatus* and *A. rhodogaster*.

In the Owls the confusion and uncertainty is still greater, as will be seen by the following series of classifications.

Bonaparte (Consp. Av. 1850).

Surniinae = *Surninae* (pt.) and *Buboninae* (G. R. Gray).

Uluinae = *Otus*, *Scops*, *Bubo*, *Syrnium*, *Nyctale* (Kaup);
= *Buboninae*, *Syrniinae*, and *Surninae* (pt.) (G. R. Gray).

Striginae = *Striginae* (G. R. Gray) = *Strix* (Kaup).

Kaup (Contrib. to Orn. 1852*).

Surniinae ..	{	<i>Glaucidium.</i> <i>Nyctale.</i> <i>Athene.</i> <i>Surnia.</i> <i>Ieraglaux.</i>		Striginae ...	{	<i>Scops.</i> <i>Otus.</i> <i>Bubo.</i> <i>Strix.</i> <i>Syrnium.</i>
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G. R. Gray (Cat. Gen. B. 1855).

Surninae = *Surninae* (Kaup).

Buboninae = *Scops*, *Bubo* (Kaup).

Syrniinae = *Otus*, *Syrnum* (Kaup).

Striginae = *Strix* (Kaup).

Schlegel (Mus. des Pays-Bas, 1862).

Oti {	<i>Otus.</i> <i>Bubo.</i> <i>Scops.</i>		Striges {	<i>Strix.</i> <i>Uhula</i> = <i>Syrnium</i> , <i>Nyctale</i> , <i>Surnia</i> (Kaup). <i>Noctua</i> = <i>Glaucidium</i> , <i>Athene</i> , <i>Ieraglaux</i> (Kaup).
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Jerdon (Birds of India, 1862).

Striginae = *Striginae* (G. R. Gray) = *Strix* (Kaup).

Syrniinae = *Syrnium* (Kaup).

Asioninae = *Otus* (Kaup).

Buboninae = *Buboninae* (G. R. Gray) = *Scops*, *Bubo* (Kaup).

Surniinae = *Surninae* (Kaup and G. R. Gray).

* Also printed at greater length in the Transactions of the Zoological Society, vol. iv.

Amid these conflicting opinions, and as I have to deal with very few genera, I think it best to arrange the Owls in a simple series, beginning with the small species (*Athene* and *Ephialtes*) and ending with the genus *Strix*.

Order ACCIPITRES, Linn.

Family FALCONIDÆ.

Subfamily FALCONINÆ.

FALCO, Linn.

FALCO PEREGRINUS, Gmel.

Hab. Java (*Schlegel*), Sumatra (*Raffles*), India (*Jerdon*).

The Peregrine Falcon appears to occur rarely in the western islands of the Archipelago.

HYPOTRIORCHIS, Boie.

1. HYPOTRIORCHIS SEVERUS (Horsf.); *F. aldrovandi*, Reinw.; Temm., Pl. Col. 128.

Hab. Macassar, ♂, Salwatty, ♀ (*Wall.*); Java (*Mus. Lugd.*); Philippine Isles, North India (*Jerdon*).

(♂) Bill pale at base, dusky lead-colour at tip; iris, cere, orbits, chin, and feet yellow. (♀) Bill black; cere and orbits pale yellow; feet pale orange-yellow.

This species is found in India and the Philippines, and most probably occurs occasionally in every island in the Archipelago.

2. HYPOTRIORCHIS LUNULATUS (Lath.); *F. frontatus*, Gould, B. Aust. i. pl. 10; *F. lunulatus*, Gould, Handb. B. A. i. p. 29.

Hab. Flores (*Wall.*); Ceram (*Mus. Lugd.*); Australia (*Gould*).

My specimen from Flores exactly agrees with one from South Australia; and Prof. Schlegel says the same of his Ceram specimens.

TINNUNCULUS, Vieill.

TINNUNCULUS MOLUCCENSIS, Homb. & Jacq., Voy. Pôles Sud, pl. i. f. 2; *Falco moluccensis*, Schleg., Mus. P.-B. *Falcones*, p. 28, Valkv. Nederl. Ind. pl. i. fig. 3, 4, 5.

Hab. Celebes, all the Moluccas, Flores, Timor, and Goram (*Wall.*); Borneo (*Mus. Lugd.*); Java (*De Bocarmé*).

Bill lead-colour, tip black; cere and orbits pale yellow; feet bright pale yellow.

Varies considerably in the colour and markings of the tail, some specimens from Celebes and Timor showing an approximation to *T. alaudarius*.

HIERAX, Vigors.

1. *HIERAX CÆRULESCENS* (Linn.); Pl. Col. 97; Schleg., Mus. P.-B. *Falcones*, p. 33.

Hab. Malacca, Sumatra (*Wall.*); Borneo, Java (*Mus. Lugd.*).

Iris dark; bill and feet black. This pretty little bird feeds on small reptiles and insects, and even occasionally devours fruit.

2. *HIERAX SERICEUS* (Kittl., Mém. Ac. Pétersb. 1835, pl. 1); *Falco gironieri*, Eydoux, Voy. Bonite, Ois. pl. 1.

Hab. Philippine Islands (*B. M.*).

Subfamily ACCIPITRINÆ.

ASTUR, Lacép.

(*Lophospiza*, Kaup.)

1. *ASTUR TRIVIRGATUS* (Reinw.); Pl. Col. 303; Schleg., Mus. P.-B. *Astures*, p. 22.

Bill black, base lead-colour; iris and cere orange-yellow; cheeks and orbits olive; feet yellow. Length 15 inches.

Hab. Java (*Wall.*); Borneo, Sumatra (*Mus. Lugd.*); India (*Jerdon*); Philippine Is. (*B. M.*).

2. *ASTUR GRISEICEPS*, Schlegel, Mus. P.-B. *Astures*, p. 23; Wallace, Ibis, 1864, p. 184, pl. 5.

Bill black, base beneath lead-colour; iris golden orange; cere and orbits lead-colour, tinged with yellow; feet lemon-yellow.

Hab. Celebes (Macassar and Menado) (*Wall.*).

(*Leucospiza*, Kaup.)

3. *ASTUR NOVÆ-HOLLANDIÆ* (Gmel.); Gould, B. Austr. i. pl. 15; Schleg., Mus. P.-B. *Astures*, p. 20.

Hab. New Guinea (*Mus. Lugd.*, *S. Müller*); Australia (*Gould*).

ACCIPITER, Briss.

(*Teraspiza*, Kaup.)

1. *ACCIPITER VIRGATUS* (Temm.); Pl. Col. 109, ♂; *Nisus virgatus*, Schleg., Mus. P.-B. *Astures*, p. 32.

Bill black, lead-colour at base; iris and cere yellow; feet pale orange-yellow.

Hab. Malacca, Timor (*Wall.*); Java, Sumatra (*Mus. Lugd.*); India (*Jerdon*).

2. ACCIPITER RHODOGASTER (Schleg.); *Nisus virgatus rhodogaster*, Schleg., *Mus. P.-B. Astures*, p. 32; *N. rhodogaster*, Schleg., *Valkv. Nederl. Ind. pl. xii. fig. 5, 6*.

Bill black; cere dusky yellow, feet yellow; iris bright chrome-yellow.

Hab. Celebes (*Wall.*).

3. ACCIPITER ERYTHRAUCHEN, G. R. Gray, *P. Z. S.* 1860, p. 344; *Nisus erythrauchen*, Schlegel, *Valkv. Nederl. Ind. pl. xiii. fig. 1 (?)*, 3, 4; *Uraspiza erythrauchen*, Kaup, *P. Z. S.* 1867, p. 177.

Hab. East Gilolo, ♂ (*Wall.*); Batchian, ♂, Morty, ♀ (*Mus. Lugd.*).

This species is of the same form, size, and structure as *A. rhodogaster*, and therefore belongs to Kaup's genus *Teraspiza*. There is, in fact, hardly any difference between these birds, except the red collar and more numerous tail-bands of *A. erythrauchen*.

4. ACCIPITER RUBRICOLLIS, Wall., *P. Z. S.* 1863, p. 21, pl. 4; *Nisus cirrhocephalus ceramensis*, Schleg., *Mus. P.-B. Astures*, p. 39; *N. erythrauchen*, Schleg., *Valkv. Nederl. Ind. pl. xiii. fig. 2*; *Uraspiza erythrauchen*, Kaup, *P. Z. S.* 1867, p. 177.

Bill black, lead-colour at base; iris golden-yellow; cere and feet yellow.

Hab. Bouru, Morty Is.? (*Wall.*); Ceram (*Mus. Lugd.*).

This bird has been confounded with *A. erythrauchen* by Prof. Schlegel and Dr. Kaup, on account of the great similarity of colour, and the fact of the smaller specimens being males and the larger ones females. The slender tarsi and feet and very long middle toe show that this bird belongs to the same group as *A. erythrauchen*; but besides the difference of size and of the colour of the under surface, there is an important structural character which will, I think, distinctly separate them. In *A. rubricollis* the tail is somewhat rounded, the outer rectrices

becoming longer as they approach the middle. In *A. erythrauchen*, on the other hand, the *two outer tail-feathers* on each side are *decidedly longer* than those which follow them, agreeing in this respect with *A. rhodogaster*. I may here mention that in correcting the erroneous measurement of the wing originally printed I merely noticed the palpable error of *two inches*; there is, however, a smaller error of a quarter of an inch in the same direction, the actual length of the wings of my type specimen of *A. erythrauchen* being 6.583 in., while those of *A. rubricollis* are 8.25 in. The distinct form of tail will, I presume, be admitted by Dr. Kaup to be proof positive of the specific distinctness of these birds. Schlegel's figures in the work quoted are of small size, but they seem to indicate the difference now pointed out. They also show the same difference of colour as in my specimens, the male (fig. 3) having the breast and belly entirely rufous as well as the smaller female (fig. 1), like my type of *A. erythrauchen*, while the large female (fig. 2) has the breast and belly ashy as in my type of *A. rubricollis*. I am not aware that such a marked sexual difference of colour, as this would be, exists among the Hawks. My specimen from Morty Island is a very young bird, but it seems to belong to this species.

(*Erythrospiza*, Kaup.)

5. ACCIPITER TRINOTATUS, Bp., Consp. Av. i. p. 33; *Nisus trinotatus*, Schleg., Mus. P.-B. *Astures*, p. 45; Valkv. Nederl. Ind. pl. xix. fig. 1-3.

Bill and cere above the nostrils black; cheeks and orbits orange-yellow; feet deep orange-yellow; iris chrome-yellow.

Hab. Celebes (Macassar and Menado) (*Wall.*).

This is one of the most beautiful Hawks in the East, the conspicuous white spots on the tail being displayed during flight.

6. ACCIPITER IOGASTER (S. Müll.); *Falco iogaster*, Müll., Verh. Nederl. Overz. Land- en Volkenk. p. 110; Hombr. & Jacq., Voy. au Pôle Sud, pl. ii.; *Nisus iogaster*, Schleg., Mus. P.-B. *Astures*, p. 43, Valkv. Nederl. Ind. pl. xviii.

Bill black; iris deep orange-yellow; cere, eyelids, and feet orange.

Hab. Ceram, Amboyna (*Wall.*).

7. ACCIPITER MUELLERI, Wall., P. Z. S. 1865, p. 475 ; *Erythrospiza griseogularis* (pt.), Kaup, P. Z. S. 1867, p. 175 ; *Nisus cruentus*, Schleg., Valk. Nederl. Ind. pl. xiv. & xvi.

Bill black, bluish at base ; cere and feet bright yellow.

Hab. Gilolo (*Wall.*).

Dr. Kaup considers this bird to be an old specimen of *A. griseogularis*, which has lost the nape-band. I must therefore point out their differences. *A. muelleri* is of a uniform and very dark slate-colour above, which the other never is ; beneath it is as dark as *A. iogaster*, although banded like *A. griseogularis*, but more distinctly. The bands of the tail are wider apart, the four next the end occupying a space of 2·5 inches, whereas in *A. griseogularis* they occupy scarcely 2 inches. On the throat there is a faint stripe of rufous, the feathers being white at the base, and banded with slate-colour and rufous at the ends ; but perhaps the most important character is that the primaries are of a different form, being very slightly emarginate on the inner web. It appears to me to be much more nearly allied to *A. iogaster* than to *A. griseogularis*, and to be, in fact, the representative of that species in Gilolo.

8. ACCIPITER GRISEOGULARIS (G. R. Gray, P. Z. S. 1860, p. 343) ; *Nisus cruentus*, Schleg., Mus. P.-B. *Astures*, p. 41, Valkv. Nederl. Ind. pl. xiv.—xvi.

Hab. Batchian, Gilolo, Ternate, Morty Is. (*Wall.*).

Bill black, lead-colour at base ; cere yellowish ; feet olive or ochre-yellow.

I possess eight specimens, of both sexes, and in various stages of plumage. In all these the tail only varies in length from 8·25 to 8·75 inches, the wing from 9·5 to 10·5 in. ; the tarsus is in all about 2·7 inches, the bill from the cere to the point ·85 in., and ·5 to ·55 high at the cere. These characters appear to me sufficient to distinguish it from the next species. Dr. Kaup agrees with me that these birds are quite distinct from *A. cruentus*, Gould (P. Z. S. 1842, p. 113), with which Prof. Schlegel places them. All of this form have the 4th and 5th primaries equal and longest, whereas in *A. cruentus* the 5th is decidedly shorter than the 4th, and barely equal to the 3rd.

9. ACCIPITER ÆQUATORIALIS, Wall., P. Z. S. 1865, p. 474; *Erythrospiza griseogularis* (pt.), Kaup, P. Z. S. 1867, p. 174; ? *Astur henicogrammus*, G. R. Gray, P. Z. S. 1860, p. 343, *juv.*

Bill black; cere, eyelids, and feet orange-yellow; iris golden orange-yellow.

Hab. Batchian, Gilolo, Morty Is., Waigiou, Salwatty (*Wall.*).

Four specimens in my collection show this to be a much smaller bird than *A. griseogularis*. The tail only varies from 6 to 7·25 in. and the wing from 7·75 to 9 in., so that the longest is considerably less than the shortest of the other form. The tarsus is 2·2 to 2·25 in., and is therefore always nearly ·5 in. shorter; the bill, measured as before, is ·7 as compared with ·85, and its height ·45 compared with ·5 or ·55. Dr. Kaup says that I established this species "on a middle-aged bird." But I am not aware that the age of adult birds changes the dimensions of the bill and tarsus to this extent; and if it did it would be very extraordinary that a series of twelve specimens could be divided into two groups offering such constant differences as these do. This species sometimes very closely resembles my Timor specimens of *A. torquatus*; but in *A. æquatorialis* the 5th primary is the longest, while in *A. torquatus* it is always much shorter than the 4th. In my original description of this species, the larger series of dimensions given were from a specimen which I have since determined to belong to *A. griseogularis*; so that the contrast in size between the two species is more marked than it then appeared.

(*Uraspiza*, Kaup.)

10. ACCIPITER SULAENSIS (Schleg.); *Nisus sulaensis*, Schleg., Valkv. Nederl. Ind. pl. xvi. fig. 3, 4; *Uraspiza sulaensis*, Kaup, P. Z. S. 1867, p. 176.

Hab. Sula Islands, Ceram? (*Mus. Lugd.*).

11. ACCIPITER SYLVESTRIS, Wall., P. Z. S. 1863, p. 487; *Uraspiza torquata* (pt.), Kaup, P. Z. S. 1867, p. 176.

Hab. Flores (*Wallace*).

Bill black; cere and feet yellow. Third and fourth primaries nearly equal, *the third longest*; tail with eight or nine bands. Length 12·5 to 13·5 in., wing 7 to 8 in., tail 5·5 to 6·25 in.

As Dr. Kaup has placed this species as a synonym of *A. torquatus* without a word of explanation, I have again carefully examined the two, and find them perfectly distinct. The form of the wing alone would distinguish them, since *A. torquatus* has the fourth primary longest and the third considerably shorter. The size is greatly different. Schlegel's measures of *A. torquatus*, converted into English inches, are—wing 8·7 to 9·9 in., tail 6·5 to 7·5 in. Dr. Kaup says *A. torquatus* has ten bands on the tail; Prof. Schlegel gives it fifteen or sixteen! I make about twelve or fourteen. We have therefore marked differences of colour, size, and structure to separate these birds; and I maintain that, under any definition of the word "species," this is one.

12. ACCIPITER TORQUATUS (Temm.); Pl. Col. 43, 93; *Astur cruentus*, Gould, B. Austr. i. pl. 18; *Accipiter cruentus*, Wall., P. Z. S. 1863, p. 484 (*ex* Timor); *Nisus torquatus* et *N. cruentus*, Schlegel, Mus. P.-B. *Astures*, pp. 39, 40.

Hab. Timor, Flores, Bouru (*Wall.*); Java, Sumbawa (*Mus. Lugd.*).

Bill lead-colour, cere greenish-yellow; iris and feet orange-yellow. Length 14·25 to 16·5 inches.

I now agree with Messrs. Kaup and Schlegel in regarding my Timor specimens as *A. torquatus*; but a careful examination has satisfied me that these gentlemen are wrong in retaining *A. cruentus* as a distinct species. My specimens agree exactly with Mr. Gould's figure and description as well as with Temminck's, although the latter is very badly drawn. The Australian Sparrow-Hawk to which Vigors and Horsfield (who are followed by Mr. Gould) erroneously gave the name of *A. torquatus* (Tr. Linn. Soc. xv. p. 182) is really the *Sparvius cirrhocephalus* of Vieillot (N. Dict. H. N. x. p. 328). (*Cf.* Schlegel, Mus. P.-B. *Astures*, p. 38.) These birds are so marvellously alike in colour and markings, that there is no wonder mistakes should have arisen, the figures not always showing the characteristic difference in the length of the middle toe. Both Mr. Gould's and Temminck's figures, however, agree in showing that the tail is rounded, the outer feathers being decidedly shorter than the succeeding one within; whereas in *A. cirrhocephalus* the outer feathers are equal

to those within them and longer than the middle pair. It is very unfortunate that Mr. Gould's type-specimens were allowed to go to America ; for I am not aware of a single authentic specimen of *A. cruentus* in this country. Prof. Schlegel (*op. cit.* p. 41) determines this species to be the same as *A. griseogularis*, G. R. Gray, from a single female specimen, said to be from Australia, in the Leyden Museum ; but as he gives no indication of how this bird was obtained, or by what means it was determined to be *A. cruentus*, Gould, and as Dr. Kaup agrees with me that the two birds are *widely different*, it seems probable that the Leyden bird is not really from Australia. Dr. Kaup says that *A. cruentus* is "common in New Holland," but does not say if he possesses specimens from that country.

13. ACCIPITER APPROXIMANS (Vig. & Horsf.) ; Gould, B. Austr. i. pl. 17.

Hab. Lombock (*Wall.*) ; Timor (*Mus. Lugd.*).

Iris brown ; bill dusky, tip black ; feet yellowish.

I possess one example which seems to belong to this species, though it is smaller than Australian specimens.

Male. Total length 18 in. ; wing $10\frac{1}{3}$ in. ; tail $8\frac{1}{2}$ in., with about 14 bands ; fourth primary longest, third nearly equal, fifth shorter ; tarsus 2·3 in., middle toe 1·5 in.

14. ACCIPITER POLIOCEPHALUS, G. R. Gray, P. Z. S. 1858, p. 170 ; Sclater, Ibis, 1860, pl. x. ; *Nisus poliocephalus*, Schleg., N. T. D. iii. p. 326.

Hab. Aru Is., ♀, Salwatty, ♂, Dorey, ♂ *juv.* (*Wall.*) ; Ké Is. (*Mus. Lugd.*).

Iris deep olive-brown ; cere, orbits, and feet orange-red.

This very distinct species, characteristic of the Papuan Islands, belongs to the genus *Uraspiza* of Kaup. Several specimens have lately been received at Leyden, both from the Aru Islands, where I first discovered it, and from the adjacent group of Ké.

MICRONISUS, G. R. Gray.

(*Tachyspiza*, Kaup.)

MICRONISUS SOLOENSIS (Horsf., Trans. Linn. Soc. xiii. p. 137) ; *Falco cuculoides*, Temm., Pl. Col. 110, 129 ; *Nisus soloensis*, Schleg., Mus. P.-B. *Astures*, p. 44.

Hab. New Guinea, Batchian, Sumatra, Malacca (*Wall.*); Java, Celebes, Philippine Is. (*Mus. Lugd.*).

Iris, feet, and cere yellow; gape and orbits yellowish; bill black, lead-colour at the base.

Subfamily AQUILINÆ.

AQUILA, Briss.

AQUILA GURNEYI, G. R. Gray, P.Z.S. 1860, p. 342, pl. 169; *Spizaetus gurneyi*, Schleg., Mus. P.-B. *Astures*, p. 14.

Hab. Batchian, Waigiou (*Wall.*); Aru Is., Ternate, Gilolo (*Mus. Lugd.*).

Bill and cere bluish-white, tip darker; feet white; iris yellow-olive. Total length 33 inches, wing 21 inches. Feeds on reptiles.

NEOPUS, Hodgs.

NEOPUS MALAYENSIS (Reinw.); Pl. Col. 117; *Aquila malayensis*, Schlegel, Mus. P.-B. *Aquilæ*, p. 11.

Hab. Java, Sumatra, Celebes, Ternate (*Mus. Lugd.*); India, Burmah (*Jerdon*).

I never myself met with this rare Eagle.

SPIZAETUS, Vieill.

1. SPIZAETUS CIRRHATUS (Gmel.); *Falco limnæetus*, Horsf., Trans. Linn. Soc. xiii. p. 138; *F. caligatus*, Raffles (*tom. cit.*), p. 278; *Astur unicolor*, Temm., Pl. Col. 134; *Falco niveus*, Temm., Pl. Col. 127; *Nisaetus alboniger*, Blyth, Madr. Journ. xxxi. p. 145; *Spizaetus cirrhatus*, Schleg., Mus. P.-B. *Astures*, p. 9, Valkv. Nederl. Ind. p. 53, pl. vi. vii.

Hab. Java, Penang (*Wall.*); Sumatra, Borneo (*Mus. Lugd.*); India (*Jerdon*).

My specimen from Java is nearly black, that from Penang very white beneath.

2. SPIZAETUS LANCEOLATUS, Bp., Consp. Av. i. p. 29; *S. cirrhatus* (pt.) Schlegel (*ut suprâ*).

Hab. Celebes (*Wall.*); Sula Is. (*Mus. Lugd.*).

Bill and feet black; iris yellow; feet pale lemon-yellow. Total length 23 inches, wing $13\frac{1}{4}$ inches.

The smaller size and very marked coloration render it advi-

sable, I think, to keep this as a very distinct species from *S. cirrhatus*.

3. *SPIZAETUS KIENERI*, Gervais, Mag. de Zool. 1835, Ois. pl. 35; Schleg., Mus. P.-B. *Astures*, p. 11.

Hab. Borneo (*Wall.*); Philippines? (*Mus. Lugd.*); India (*Jerdon*).

I obtained a single specimen of this small Eagle in Borneo. It had seized a pigeon, which it was devouring when I shot it. Wing 13 inches, the point 4 inches; tail 7·5 inches; tarsus 2·5 inches; middle toe 1·625 inch, inner toe 1 inch.

4. *SPIZAETUS NANUS*, sp. nov. (Plate I.)

Supra fuscus, subtus albo-rufescens; alis rotundatis brevibus; caudâ trifasciatâ; digitis parvis.

Above brown, the head paler, with a black occipital crest, white-tipped; wings rounded, the fourth and fifth quills longest; tail rather long, smoky-brown, with three blackish bands, one at the extremity and two towards the base; beneath white, tinged with rufous; a dark patch over the eyes and lores. Total length 19 inches; wing 11 inches, the tip 2 inches; tail 8·5 inches; tarsus 2·625 inches; middle toe 1·375 inch, inner toe ·86 inch. The middle toe is feathered nearly to the first joint.

Hab. Borneo.

I possess a single imperfect specimen of this bird, which differs so much in its proportions and size from the other species that I am compelled to consider it distinct.

POLIOAETUS Kaup.

1. *POLIOAETUS ICHTHYAETUS* (Horsf., Trans. Linn. Soc. xiii. p. 136); *Haliaetus ichthyaetus*, Schlegel, Mus. P.-B. *Aquilæ*, p. 17.

Hab. Malacca, Sumatra (*Wall.*); Borneo, Java (*Mus. Lugd.*); Bengal, Burmah (*Jerdon*).

Total length 26 in., wing 17·5 in., middle toe 2 in. (♂). Bill black; cere dusky; feet white.

2. *POLIOAETUS HUMILIS* (Schlegel & Müller, Verh. Ned. Overz. Vög. pl. 6); *Ichthyaetus nanus*, Blyth, J. A. S. B. 1842, p. 202; *Haliaetus humilis*, Schleg., Mus. P.-B. *Aquilæ*, p. 18; *Pandion humilis*, Schleg., Valkv. Nederl. Ind. pl. v. fig. 3.

Hab. Sumatra (*Mus. Lugd.*); Celebes (*Wall.*).

Wing 15·5 in., middle toe 1·75 in. (♀). Base of tail dusky above, whitish beneath; bill and cere dusky lead-colour; feet pale bluish-white; iris light yellow.

CUNCUMA, Hodgs.

CUNCUMA LEUCOGASTER (Gmel); *Ichthyiaetus leucogaster*, Gould, B. Aust. i. pl. 3; *Haliaetus leucogaster*, Schleg., Mus. P.-B. *Aquilæ*, p. 14, Valkv. Nederl. Ind. pl. iv. fig. 1, 2.

Hab. Malacca, Celebes, Gilolo, Batchian, Morty, Aru Is. (*Wall.*); Sumatra, Java, Timor (*Mus. Lugd.*); India, Australia.

Bill black, base and cere lead-colour; feet very pale yellow; iris olive-brown. Length 26 to 29 inches.

PANDION, Savigny.

PANDION LEUCOCEPHALUS, Gould, P. Z. S. 1837, p. 138, B. Austr. i. pl. 6; *P. haliaetus*, Schleg., Mus. P.-B. *Aquilæ*, p. 22.

Hab. New Guinea (*Wall.*); Java, Borneo, Ceram (*Mus. Lugd.*).

It is very doubtful whether this bird should be separated from *P. haliaetus* (*cf.* Ibis, 1867, p. 464).

CIRCAETUS, Vieill.

CIRCAETUS GALLICUS (Gmel.), Schleg., Mus. P.-B., *Buteones*, p. 23.

Hab. Timor, Flores (*Mus. Lugd.*).

SPILORNIS, Gray.

1. SPILORNIS CHEELA (Daudin, Tr. d'Orn. ii. p. 44); Jerdon, B. Ind. i. p. 77.

Hab. Borneo (*Wall.*); India (*Jerdon*).

Total length 23 in., wing 1·4 in., tail 9 in. This bird appears to be a small race of the Indian species.

2. SPILORNIS BACHA (Daudin, Tr. d'Orn. ii. p. 43); *Falco bido*, Horsf., Trans. Linn. Soc. xiii. p. 137; *Circaetus bacha*, Schlegel, Mus. P.-B. *Buteones*, p. 26, Valkv. Nederl. Ind. pl. xxii.

Hab. Java (*Wall.*); Sumatra, Borneo (*Mus. Lugd.*).

Bill black, tip horny; iris and cere yellow; feet orange-yellow. Length 23·5 inches.

3. *SPILORNIS RUFIPLECTUS*, Gould, P. Z. S. 1857, p. 222 ; *Circaetus bacha celebensis*, Schleg., Mus. P.-B. *Buteones*, p. 27 ; *Circaetus rufiplectus*, Schleg., Valkv. Nederl. Ind. p. 72, pl. xxiii. fig. 1-3.

Hab. Celebes (*Wall.*).

Bill black ; iris, cere, and feet yellow.

4. *SPILORNIS SULAENSIS* (Schlegel, Valkv. Nederl. Ind. p. 72, pl. xxiii. fig. 4-6).

Hab. Sula Islands (*Wall.*).

This species is hardly more than a slight local modification of the last.

5. *SPILORNIS HOLOSPILUS* (Vigors, P. Z. S. 1831, p. 96) ; *Circaetus holospilus*, Gray & Mitch., Gen. B. pl. 7 ; Schleg., Mus. P.-B. *Buteones*, p. 28.

Hab. Philippine Is. (*B. M.*)

Subfamily MILVINÆ.

HALIASTUR, Selby.

1. *HALIASTUR INDUS* (Bodd.) ; Pl. Enl. 416 ; *Falco pontice-rianus*, Bp., Consp. i. p. 15 ; *Haliaetus indus*, Schleg., Mus. P.-B. *Aquilæ*, p. 19.

Hab. Malacca, Sumatra, Timor, Flores (*Wall.*) ; Borneo, Philippine Is. (*Mus. Lugd.*) ; India (*Jerdon*).

Total length 20 in., wing 15 to 15.5 in. Bill pale lead-colour, tip yellowish ; iris dull yellow ; cere and feet pale yellow.

2. *HALIASTUR LEUCOSTERNUS*, Gould, P. Z. S. 1837, p. 138, B. Austr. i. pl. 4 ; *Haliaetus indus* (pt.), Schleg., Mus. P.-B. *Aquilæ*, p. 19.

Hab. Celebes, all the Moluccas, and New Guinea (*Wall.*).

A much smaller bird. Total length 17 to 19 in., wing 13.5 to 14 in. Bill bluish-white ; iris olive-brown ; feet pale yellow. Sits on bare trees over water, and on fishing-stakes.

MILVUS, Cuv.

1. *MILVUS AFFINIS*, Gould, P. Z. S. 1837, p. 140, B. Austr. i. pl. 21 ; Schleg., Valkv. Nederl. Ind. t. 20. fig. 1.

Hab. Timor, Macassar (*Wall.*) ; Sumatra ? (*Mus. Lugd.*).

Wing 15·75 in. Iris dusky olive; bill black; cere, gape, and feet yellow.

ELANUS, Savigny.

ELANUS HYPOLEUCUS, Gould, P. Z. S. 1859, p. 127; *E. intermedius*, Schleg., Mus. P.-B. *Milvi*, p. 7.

Hab. Macassar (*Wall.*); North Celebes, Borneo, Java (*Mus. Lugd.*).

Bill black; cere and feet yellow; iris red.

I cannot think that *Elanus intermedius* is distinct from this species, since the spots on the under wing-coverts (which is almost the only point of difference) occur in the immature birds.

PERNIS, Cuvier.

PERNIS CRISTATUS, Cuv.; Schleg., Mus. P.-B. *Pernes*, p. 2, Valkv. Nederl. Ind. pl. xxv. fig. 1-3, pl. xxvi. fig. 1, 2; *Falco ptilorhynchus*, Temm., Pl. Col. 44.

Hab. Sumatra, Bangka, Java (*Mus. Lugd.*); India (*Jerdon*).

Var. *celebensis*, Schleg., Valkv. Nederl. Ind. pl. xxvi. f. 3.

Hab. Celebes (*Mus. Lugd.*).

The variety from Celebes figured by Prof. Schlegel is coloured exactly like *Spizaetus lanceolatus*, which is also peculiar to that island—a most remarkable fact, which indicates either the action of some local peculiarity in determining specialities of colour, or the existence of “mimicry” between these birds. I am sorry Prof. Schlegel has not conferred a specific name on it, since he has done so on local forms less distinctly marked—for instance, *Baza rufa* and *Spilornis sulaensis*.

HENICOPERNIS, G. R. Gray.

HENICOPERNIS LONGICAUDA (Garnot, Voy. Coquille, i. p. 588, pl. 10); *Dædalion longicauda*, Lesson, Tr. d’Orn. i. p. 67; *Pernis* (*Henicopernis*) *longicauda*, G. R. Gray, P. Z. S. 1859, p. 153; Schleg., N. T. D. iii. p. 327.

“Rostro pedibusque luteis, corpore supra nigro brunneaceoque, subtus fulvo-alba longitrorsum flammis nigris, cauda fasciis nigris et albidis intersecta.” (*Lesson*.)

Hab. New Guinea, Mysol, Waigiu (*Wall.*); Aru Is. (*Mus. Lugd.*).

Bill nearly white, tip blackish ; cere bluish-white ; iris orange-yellow ; feet pale lemon-yellow or white. Total length 21·5 in; wing 14 in., tail 11·5 in. (♂).

Baza, Hodgson.

1. BAZA REINWARDTI, Schleg., Mus. P.-B. *Pernes*, p. 5 ; *Lophotes reinwardti*, Mull. & Schleg., Verh. Ned. Overz. Vög. pl. 5 ; *Baza stenozona*, G. R. Gray, P. Z. S. 1858, p. 169.

Hab. Bouru, Amboyna, Ceram (*Wall.*) : type form.

Aru Is., New Guinea (*Wall.*) ; Salwatty, Ké Is. (*Mus. Lugd.*) ;

B. stenozona, Timor (*Wall.*) : smaller form.

Bill black, the base and cere lead-colour ; feet bluish-white ; iris yellow. The orbits and eyes of these birds are exceedingly large.

I agree with Prof. Schlegel that the birds from the Papuan group named *B. stenozona* by Mr. G. Gray (before he had obtained specimens of *B. reinwardti*) cannot be separated. The Timor birds are perhaps more distinct, as they are about an inch shorter in the wing, and have the concealed white spot on the tertiaries and their coverts larger, as well as the terminal black band on the tail narrower, as it is also in *B. stenozona*.

2. BAZA RUFA, Schlegel, Valkv. Nederl. Ind. p. 74, pl. xxvii. fig. 4, pl. xxviii. fig. 1-3.

Hab. Batchian, ♂ ♀ (*Wall.*) ; Gilolo (*Mus. Lugd.*).

My specimens fully bear out the distinctness of this species. Bill black, base and cere lead-colour ; feet bluish-white ; iris yellow.

3. BAZA MAGNIROSTRIS, Kaup, Isis, 1847, p. 343 ; Schleg., Valkv. Nederl. Ind. pl. xxviii. fig. 4, 5 ; N. T. D. iii. p. 328.

Hab. Celebes, Sula Is. (*Wall.*) ; Borneo ? (*Mus. Lugd.*) ; Philippine Is. ?

Bill lead-colour, black above ; feet white ; iris yellow.

The Bornean specimen in the Leyden Museum probably belongs to the next species.

4. BAZA SUMATRENSIS (Lafresn., Rev. Zool. 1848, p. 210).

Hab. Sumatra (*Wall.*).

Bill black, pale at base beneath ; feet yellowish-white ; iris

yellow. Total length 18·5 in., wing 12·5 in., tail 9 in., crest 2 in. (♀).

A single specimen of this bird was obtained by me in the interior of Eastern Sumatra.

BAZA LOPHOTES, Cuv.

Schlegel says this Indian bird is found at *Malacca*; but I know not on what authority.

Subfamily BUTEONINÆ.

POLIORNIS, Kaup.

1. POLIORNIS LIVENTER (Temminck); Pl. Col. 438; *Buteo liventer*, Schlegel, Mus. P.-B. *Buteones*, p. 21, Valky. Nederl. Ind. pp. 33, 69, pl. xxi. fig. 1.

Hab. Celebes (*Wall.*); Java, Borneo, Timor (*Mus. Lugd.*).

Bill yellow, the tip black; orbits, cere, and feet yellow; iris pale yellow.

2. POLIORNIS POLIOGENYS (Temminck); Pl. Col. 325.

Hab. Morty Is., Sanguir Is. (*Mus. Lugd.*); Philippines (*B. M.*).

CIRCUS, Lacépède.

CIRCUS JARDINII, Gould, P. Z. S. 1837, p. 141, B. Austr. pl. 27; *C. assimilis* (pt.), Schlegel, Mus. P.-B. *Circi*, p. 9.

Hab. Celebes (*Wall.*); Australia (*Gould*).

Iris bright yellow; cere pale yellow; bill dusky; legs yellow.

Prof. Schlegel maintains that *C. assimilis* of Jardine and Selby is specifically identical with *C. jardinii*, Gould; but as Mr. Gould tells us that the two birds are abundant in Australia, but have a *different distribution*, I presume he can hardly be mistaken on this point.

As in my papers on the Birds of the Malay Archipelago, in 'The Ibis,' and in the 'Proceedings of the Zoological Society,' I append a Table showing the distribution of the species among the Islands and groups of Islands; but I have thought it best to keep the *Falconide* and *Strigide* separate, since their different habits lead to some striking differences in their distribution, as previously noticed (page 3).

1	2	PALEARCTIC REGION.	INDIAN REGION.								AUSTRALIAN REGION.																
			Asia.		Indo-Malay Islands.				Cele- bes.	Moluccan group.										Papuan Islands.			Timor group.				
			3	4	5	6	7	8		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
No.		Europe.	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sula Island.	Batchian.	Kaioa Island and Ternate.	Gilolo.	Moroty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ile Island.	Aru Islands.	Mysol.	Waigou.	New Guinea and Salwatty.	Lombok.	Flores.	Timor.	
	FALCONIDÆ.																										
	FALCONINÆ.																										
	Falco																										
1.	peregrinus ...	I	I			I	I																				
	Hypotriorchis																										
2.	severus		I				I		I	I														I			
3.	lunulatus																I								I		
	Tinnunculus																										
4.	moluccensis ..						I	I		I	I	I	I	I	I	I	I	I	I						I	I	
	Hierax																										
5.	cærulescens ..					I	I	I	I																		
6.	sericeus								I																		
	ACCIPITRINÆ.																										
	Astur																										
7.	trivirgatus ...		I			I	I	I	I																		
8.	griseiceps		I							I																	
9.	{ novæ-hol- landiæ ... }																						I				
	Accipiter																										
10.	virgatus		I		I	I	I																			I	
11.	rhodogaster ..									I																	
12.	erythrauchen ..											I		I	I												
13.	rubricollis ..														I	I	I										
14.	trinotatus ...									I																	
15.	iogaster																I										
16.	muelleri													I													
17.	aquatorialis ..											I		I	I							I	I				
18.	griseogularis ..											I	I	I	I												
19.	sulaensis										I																
20.	sylvestris																								I		
21.	torquatus						I									I									I	I	
22.	approximans ..																							I		I	
23.	poliocephalus ..																		I	I			I				
	Micronisus																										
24.	solenensis				I	I	I		I	I		I											I				
	AQUILINÆ.																										
	Aquila																										
25.	gurneyi											I	I	I						I		I					
	Neopus																										
26.	malayensis		I	I	I	I	I			I				I													
	Spizaetus																										
27.	cirrhatu8 ...		I		I	I	I	I																			

TABLE (continued).

2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
FALCONIDÆ.																											
AQUILINÆ.																											
Spizaetus																											
lanceolatus...									I	I																	
kieneri		I						I	I																		
nanus								I																			
Polioaetus																											
ichthyaetus...		I	I	I	I	I	I																				
humilis						I			I																		
Cuneuma																											
leucogaster...		I	I	I	I	I			I		I	I	I	I	I	I	I	I	I						I	I	
Pandion																											
leucocephalus							I	I								I						I				I	
Circæus																											
gallicus		I																						I	I		
Spilornis																											
cheela		I						I																			
bacha						I	I	I																			
rufipectus									I																		
sulaensis										I																	
holospilus								I																			
MILVINÆ.																											
Haliastur																											
indus		I			I	I		I	I															I	I		
leucosternus									I		I	I	I	I	I	I	I	I	I	I	I	I					
Milvus																											
affinis					I				I																I		
Elanus																											
hypoleucus...							I	I		I																	
Pernis																											
cristatus		I			I	I	I		I																		
Henicopernis...																											
longicauda																			I	I	I	I					
Baza																											
reinwardti															I	I		I	I			I				I	
rufa											I		I														
magnirostris.									I	I																	
sumatrensis					I		I																				
BUTEONINÆ.																											
Poliornis																											
liventer							I		I																I		
poliogenys								I						I													
Circus																											
jardinii									I																	I	
Number of species ... }					10	14	17	14	8	18	5	9	5	10	8	6	8	3	5	6	2	4	9	1	6	10	
Number of species ... }							24		8	20				19							11			12			
Peculiar species.....							4		2	8				6							2			1			
Indo-Malay Region. 28 species.														Austro-Malay Region. 39 species.													

Family STRIGIDÆ.

ATHENE, Boie.

a. Tarsi stout, feathered to the toes.

1. ATHENE PUNCTULATA (Quoy & Gaim., Voy. Astrolabe, Ois. pl. i. fig. 1); *A. punctulata*, Bp., Consp. Av. i. p. 41; *Noctua punctulata*, Schleg., Mus. P.-B. *Striges*, p. 29.

Hab. Celebes, Macassar (*Wall.*); Menado (*Mus. Lugd.*).

2. ATHENE GUTERUHI (Müller, Verh. Nederl. Eth. p. 79); *Athene guteruhi* Bp., Consp. Av. i. p. 41; *Noctua guteruhi*, Schleg., Mus. P.-B. *Striges*, p. 26.

Hab. Timor (*Wall.*).

Iris and feet yellow; cere dull yellow; bill blue lead-colour; upper mandible black at the gape.

3. ATHENE SCUTELLATA (Raffles, Trans. Linn. Soc. xiii. p. 280); *Strix hirsuta*, Temm., Pl. Col. 289; *Athene malaccensis*, Eyton, Ann. & Mag. N. H. xvi. (1845), p. 228; *Noctua hirsuta*, Schleg., Mus. P.-B. *Striges*, p. 25.

Hab. Malacca (*Wall.*).

This seems rather smaller than the Indian race; and the white spots of the scapulars, said by Schlegel to be "large" in Indian specimens, are entirely absent in my specimen, which may be distinct.

4. ATHENE BORNEENSIS, Bp., Consp. Av. i. p. 41; *Noctua hirsuta borneoensis*, Schleg., Mus. P.-B. *Striges*, p. 25.

Hab. Borneo (*Wall.*).

My specimen has only four bands on the tail, and the terminal one is nearer the end than in the Malacca specimen. The white spots on the scapulars are also very distinct.

5. ATHENE PHILIPPENSIS (Schleg., Mus. P.-B. *Striges*, p. 26).

Hab. Philippine Islands (*Mus. Lugd.*).

6. ATHENE RUFOSTRIGATA, G. R. Gray, P. Z. S. 1860, p. 344.

Hab. East Gilolo (*Wall.*).

Total length 16·5 in.; wing 11·25 in.; tail 6·5 in.; tarsus 2 in.; middle toe 1·5 in, its claw ·575, inner claw 1 inch.

Nearly allied to *A. connivens* of Australia, but darker, and with more powerful feet and claws.

7. *ATHENE HYPOGRAMMA*, G. R. Gray, P. Z. S. 1860, p. 344.
Hab. Gilolo, Batchian (*Wall.*).

Bill black; lower mandible at base bluish; cere olive or dull yellow; feet and iris bright yellow. Total length 11·75 to 13·5 in., wing 8 to 9 in. Tarsi densely feathered; toes clothed with stiff hairs; claws long, slender, and very sharp.

8. *ATHENE FLORENSIS*, Wallace, P. Z. S. 1863, p. 488.

Hab. Flores (*Wall.*).

Total length 12·75 in., wing 9·25 in., tail 5·25 in., tarsus and middle toe without claw 2·25 in., bill from gape 1 inch.

9. *ATHENE OCHRACEA* (Schlegel, N. T. D. iii. p. 183).

Hab. Celebes (*Mus. Lugd.*).

10. *ATHENE CASTANOPTERA* (Horsfield, Trans. Linn. Soc. xiii. p. 140); *Strix spadicea*, Reinw., Pl. Col. pl. 98; *Noctua castanoptera*, Schleg., Mus. P.-B. *Striges*, p. 34.

Hab. Java (*Mus. Lugd.*).

“*A. castanea*; capite et pectore brunneo fulvoque fasciatis; ventre crissoque albis; scapularibus marginibusque alarum albo-maculatis; remigibus rectricibusque luteo-rufo fasciatis.” (*Horsfield*). Long. 7·5–8 poll.

11. *ATHENE SYLVATICA*, Bp., Consp. Av. i. p. 40; *Noctua sylvatica*, Schleg., Mus. P.-B. *Striges*, p. 36.

Hab. Sumatra (*Mus. Lugd.*).

12. *ATHENE ARUENSIS* (Schlegel, N. T. D. iii. p. 329).

Hab. Aru Islands (*Mus. Lugd.*).

13. *ATHENE FRANSENI* (Schlegel, N. T. D. iii. p. 256).

Hab. Waigiou (*Mus. Lugd.*).

Professor Schlegel says that this species is allied to the *Athene strenua*, Gould, from Australia.

b. Tarsi slender, sparsely clothed with bristly feathers.

(*Ieraglaux*, Kaup.)

14. *ATHENE SQUAMIPILA*, Bp., Consp. Av. i. p. 41; *Noctua squamipila*, Schleg., Mus. P.-B. *Striges*, p. 27.

Hab. Ceram (*Wall.*).

Total length 12·25 in., wing 8·5 in., tail 5·25 in.

15. *ATHENE HANTU*, Wallace, P. Z. S. 1863, p. 22.

Hab. Bouru (*Wall.*).

Total length 12 in., wing 8·75 in., tail 5 in. Bill whitish horn-colour; iris yellow; feet white.

Allied to *A. squamipila*, Bp., but the feet are more slender, and the other proportions (as well as the colours) differ.

16. *ATHENE VARIEGATA* (Quoy & Gaimard, Voy. Astrolabe, Ois. pl. i. fig. 2); *Athene variegata*, Bp., Consp. Av. i. p. 41; *Ieraglaux variegatus*, Kaup, Trans. Zool. Soc. iv. p. 216.

Hab. New Ireland.

17. *ATHENE JACQUINOTI*, Hombron, Voy. au Pôle Sud, Ois. pl. iii. fig. 1; *Ieraglaux jacquinoti*, Kaup, Trans. Zool. Soc. iv. p. 216.

Hab. Solomon Island (*Mus. Par.*).

18. *ATHENE HUMERALIS*, Hombron & Jacquinot, Voy. au Pôle Sud, Ois. pl. iv. fig. 1; *Ieraglaux humeralis*, Kaup, Trans. Zool. Soc. iv. p. 221.

Hab. New Guinea?

19. *ATHENE THEOMACHA* (Bp., Comptes Rendus, tom. xli. p. 654).

Hab. Triton Bay, New Guinea.

EPHIALTES, Keys. & Bl.

a. Wing rounded, 4th and 5th quills longest, the point of the wing very short.

1. *EPHIALTES LEMPIJI* (Horsfield, Trans. Linn. Soc. xiii. p. 140); *Strix noctula*, Reinw.; Pl. Col. 99; *Scops noctula*, Schleg., Mus. P.-B. *Oti*, p. 24.

Hab. Malacca, Sumatra (*Wall.*); Java, Borneo (*Mus. Lugd.*).

2. *EPHIALTES MANTIS* (Bp., Consp. Av. i. p. 47); *Strix rufescens*, Horsf., Trans. Linn. Soc. xiii. p. 140?

Hab. Malay Peninsula (*Wall.*); Sumatra, Borneo (*Mus. Lugd.*); Java (*Horsfield*)?

Horsfield's description is not recognizable as applied to this species, which is nevertheless very distinct.

b. Wing more pointed, 3rd and 4th quills longest, point of the wing much longer.

3. *EPHIALTES MAGICUS* (Bp., Consp. Av. i. p. 46).

Hab. Ceram (*Wall.*); Amboyna (*Mus. Lugd.*).

Iris yellow; bill dusky; feet pale.

4. *EPHIALTES LEUCOSPILA*, G. R. Gray, P. Z. S. 1860, p. 344; *Scops magicus* (pt.), Schleg., Mus. P.-B. *Oti*, p. 22.

Hab. Batchian, Morty Island, Bouru (*Wall.*); Ternate, Celebes (*Mus. Lugd.*).

Iris yellow; bill horny black; feet pale.

This appears to differ constantly in coloration from the *E. magicus* of Ceram. I therefore keep the two distinct.

5. *EPHIALTES SILVICOLA* (Wallace, P. Z. S. 1863, p. 487).

Hab. Flores (*Wall.*).

Total length 12 inches, wing 8.5 in., tail 4.5 in., bill from gape 1.1 in.

6. *EPHIALTES MENADENSIS* (Quoy & Gaimard, Voy. *Astrolabe*, Ois. pl. ii. fig. 2).

Hab. Celebes (Macassar and Menado), Flores (*Wall.*).

7. *EPHIALTES PENNATUS* (Hodgson, J. A. S. B. vi. p. 369); *Scops sunia*, Hodgs., As. Res. xix. p. 175; Jerdon, B. Ind. i. p. 136; *S. zorca asiaticus*, Schleg., Mus. P.-B. *Oti*, p. 20; *Scops malayanus*, A. Hay?

Hab. India (*Jerdon*); Malacca (*Wall.*).

BUBO, Dum.

1. *BUBO ORIENTALIS* (Horsfield), Trans. Linn. Soc. xiii. p. 140; *Strix sumatrana*, Raffles, tom. cit. p. 279; *S. strepitans*, Temm., Pl. Col. 174, 229.

Hab. Singapore (*Wall.*); Java (*Mus. Lugd.*); Sumatra (*Castl.*).

Var. *minor*, Schleg., Mus. P.-B. *Oti*, p. 13.

Hab. Banka (*Mus. Lugd.*).

2. *BUBO PHILIPPINENSIS*, Kaup, Trans. Zool. Soc. iv. p. 244; Schleg., Mus. P.-B. *Oti*, p. 14.

Hab. Philippine Islands (*B. M.*)

KETUPU, Less.

KETUPU JAVANENSIS, Less., Tr. d'Orn. p. 114; *Strix ceylonensis*, Temm., Pl. Col. 74; *Strix ketupu*, Horsf., Trans. Linn. Soc. xiii. p. 141.

"Ferruginea, supra perfusco varia, subtus nigro lineata, remigibus rectricibusque fuscis ochroleuco fasciatis, capite au-

rito. . . Tarsi nudi reticulati. Digiti robusti." (*Horsfield.*)
Long. 21 poll.

Hab. Malacca, Borneo, Java (*Wall.*).

CICCABA, Wagl.

1. CICCABA LEPTOGRAMMICA (Temmin.) ; Pl. Col. 525 ; *Ulula leptogrammica*, Schleg., Mus. P.-B. *Striges*, p. 20.

Hab. Borneo (*Wall.*).

2. CICCABA MYRTHA, Bp., Consp. Av. i. p. 44 ; *Ulula myrtha*, Schleg., Mus. P.-B. *Striges*, p. 19.

Hab. Sumatra (*Mus. Lugd.*).

3. CICCABA SELOPUTO (*Horsfield*, Trans. Linn. Soc. xiii. p. 140) ; *Strix pagodarum*, Temmin., Pl. Col. 230 ; *Ulula seloputo*, Schleg., Mus. P.-B. *Striges*, p. 22.

"Supra badio-ferruginosa fasciis transversis obsoletioribus, subtus alba fasciis ferruginoso-badiis saturatioribus."
Long. 20 poll. (*Horsfield.*)

Hab. Penang (*Wall.*) ; Java (*Mus. Lugd.*) ; Burmah (*Jerdon*)*.

PHODILUS, Geoff.

PHODILUS BADIUS (*Horsfield*, Trans. Linn. Soc. xiii. p. 139) ; *Jerd.*, B. Ind. i. p. 119 ; Temmin., Pl. Col. 318 ; *Ulula badia*, Schleg., Mus. P.-B. *Striges*, p. 23.

"Badia, nigro punctata, subtus pallidior, capite antice gulaque albidis badio-variis. . . Pedes lanuginosi pallide castanei." (*Horsfield.*) Long. 11 poll.

Hab. Borneo (*Wall.*) ; Sumatra, Java (*Mus. Lugd.*) ; Burmah (*Jerdon*).

STRIX, Linn.

1. STRIX JAVANICA, Wurm., *Licht. Mag.* (1787) iv. 2. 10 ; Gmel., S. N. i. p. 295 ; *Horsf.*, Trans. Linn. Soc. xiii. p. 139 ; *S. flammea* (pt.), Schleg., Mus. P.-B., *Striges*, p. 4 ; *S. delicatula* (pt.), Kaup, Trans. Zool. Soc. iv. p. 247 ; *Jerd.*, B. Ind. i. p. 117.

Hab. Java (*Mus. Lugd.*) ; Lomboek (*Wall.*) ; India (*Jerdon*).

2. STRIX ROSENBERGI, Schlegel, N. T. D. iii. p. 181.

Hab. Celebes, Macassar (*Wall.*) ; Menado (*Mus. Lugd.*).

I obtained this fine and powerful species at Macassar in 1856, in bamboo-thickets.

* [Qu. (*Blyth*), *Ibis*, 1866, p. 253?—Ed.]

